

DETAILED ACTION

This communication is responsive to a telephonic interview on 01/06/2010.

Claims 1-4, 6-16, 18-25, 27-33 are pending in this application. Claims 1, 13, 25 are independent claims.

Information Disclosure Statement

Applicants' Information Disclosure Statements, filed 12/29/09, 07/24/09, 02/05/09, have been received, entered into the record, and considered. See attached form PTO-1449.

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Applicant's representative, Mr. Chad Terrell, on 01/06/10.

Cancel claims 7, 19, 28

The application has been amended as follows:

1. (Currently amended) A serverless backup system for backing up information on a network including one or more servers, comprising:

a storage system for storing information to be backed up and restored, the storage system operable to:

receive the information from a plurality of workstations; and

store the information received from the plurality of workstations; and

a backup storage system for backing up the information and restoring the information, the backup storage system coupled to the storage system and to one or more servers via a network, the backup storage system operable to:

obtain a static view of a relevant portion of the storage system, wherein the static view is obtained using one or more of a backup mirror system and taking a snapshot of the relevant portion of the storage system, wherein a period of write inactivity to the storage system is waited for prior to obtaining the static view;

map one or more blocks of data comprising the information being backed up to corresponding files; and

back up the information by transferring the information being backed up using one or more data movers operable to transfer the information being backed up directly from the storage system to the backup storage system, using one or more extended copy commands, without going through the one or more servers; and

restore the information by transferring the information being restored using one or more data movers operable to transfer the information being restored directly from the backup storage system to the storage system, using one or more extended copy commands, without going through the one or more servers.

2. (Original) The system as recited in Claim 1, wherein the backup storage system comprises a tape storage system.

3. (Original) The system as recited in Claim 1, wherein the storage system comprises a disk storage system.

4. (Original) The system as recited in Claim 1, wherein the network comprises a storage area network.

5. (Cancelled)

6. (Currently amended) The system as recited in Claim 1, wherein the static view is obtained by taking the snapshot of the relevant portion of the storage system, the snapshot being taken prior to transferring information directly from the storage system to the backup storage system, ~~a snapshot of the storage system is taken.~~

7. (Cancelled)

8. (Currently Amended) The system as recited in ~~Claim 7~~ Claim 1, wherein the period of inactivity is a predefined period of time.

9. (Original) The system as recited in Claim 8, wherein the predefined period of time is three seconds.

10. (Currently amended) The system as recited in ~~Claim 7~~ Claim 1, wherein if the period of write inactivity does not occur by time a timeout period has expired, the transfer fails.

11. (Original) The system as recited in Claim 10, wherein the timeout period is a predefined period of time.

12. (Original) The system as recited in Claim 11, wherein the predefined period of time is 80 seconds.

13. (Currently amended) A serverless backup method for backing up information on a network including one or more servers, comprising:

providing a storage system for storing information to be backed up and restored, the storage system operable to:

receive the information from a plurality of workstations; and

store the information received from the plurality of workstations;

providing a backup storage system for backing up the information and restoring the information, the backup storage system coupled to the storage system and to one or more servers via a network;

obtaining a static view of a relevant portion of the storage system, wherein the static view is obtained using one or more of a backup mirror system and taking a snapshot of the relevant portion of the storage system, wherein a period of write inactivity to the storage system is waited for prior to obtaining the static view;

mapping one or more blocks of data comprising the information being backed up to corresponding files;

backing up the information by transferring the information being backed up using one or more data movers operable to transfer the information being backed up directly from the storage system to the backup storage system, using one or more extended copy commands, without going through the one or more servers; and

restoring information by transferring information being restored using one or more data movers operable to transfer the information being restored directly from the backup storage system to the storage system, using one or more extended copy commands, without going through the one or more servers.

14. (Original) The method as recited in Claim 13, wherein the backup storage system comprises a tape storage system.

15. (Original) The method as recited in Claim 13, wherein the storage system comprises a disk storage system.

16. (Original) The method as recited in Claim 13, wherein the network comprises a storage area network.

17. (Cancelled)

18. (Currently Amended) The method as recited in Claim 13, ~~further comprising taking a snapshot of the storage system prior to~~ wherein the static view is obtained by taking the snapshot of the relevant portion of the storage system, the snapshot being taken transferring information directly from the storage system to the backup storage system.

19. (Cancelled)

20. (Currently amended) The method as recited in ~~Claim 19~~ Claim 13, wherein the period of write inactivity is a predefined period of time.

21. (Previously presented) The method as recited in Claim 20, wherein the predefined period of time is three seconds.

22. (Currently amended) The method as recited in ~~Claim 19~~ Claim 13, wherein if the period of write inactivity does not occur by time a timeout period has expired, the transfer fails.

23. (Previously presented) The method as recited in Claim 22, wherein the timeout period is predefined period of time.

24. (Previously presented) The method as recited in Claim 23, wherein the predefined period of time is 80 seconds.

25. (Currently amended) A computer readable medium including code for performing a serverless backup method for backing up information on a network, the network including a storage device for storing information to be backed up and restored, the storage system operable to receive the information from a plurality of workstations and store the information received from the plurality of workstations, the network further including a backup storage system for backing up the information and restoring the information, the backup storage system coupled to the storage system and to one or more servers via the network, the code comprising:

code for obtaining a static view of a relevant portion of the storage system,
wherein the static view is obtained using one or more of a backup mirror system and taking a snapshot of the relevant portion of the storage system, wherein a period of write inactivity to the storage system is waited for prior to obtaining the static view;

code for mapping one or more blocks of data comprising the information being backed up to corresponding files;

code for backing up the information by transferring the information being backed up using one or more data movers operable to transfer the information being backed up directly from the storage system to the backup storage system, using one or more extended copy commands, without going through the one or more servers; and

code for restoring the information by transferring the information being restored using one or more data movers operable to transfer the information being restored directly from the backup storage system to the storage system, using one or more extended copy commands, without going through the one or more servers.

26. (Cancelled)

27. (Currently amended) The medium as recited in Claim 25, ~~further comprising code for taking a snapshot of the storage system wherein the static view is~~ obtained by taking the snapshot of the relevant portion of the storage system, the snapshot being taken prior to transferring information directly from the storage system to the backup storage system.

28. (Cancelled)

29. (Currently amended) The medium as recited in ~~Claim 28~~ Claim 25, wherein the period of write inactivity is a predefined period of time.

30. (Original) The medium as recited in Claim 29, wherein the predefined period of time is three seconds.

31. (Currently amended) The medium as recited in ~~Claim 28~~ Claim 25, wherein if the period of write inactivity does not occur by time a timeout period has expired, the transfer fails.

32. (Original) The medium as recited in Claim 31, wherein the timeout period is a predefined period of time.

33. (Original) The medium as recited in Claim 32, wherein the predefined period of time is 80 seconds.

Statement of Reasons for Allowance

Claims 1-4, 6, 8-16, 18, 20-25, 27, 29-33 are allowed.

The following is an examiner's statement of reasons for allowance.

The present invention is directed to a backup storage system for backing up information and a storage system for storing information to be backed up and restored, wherein information being backed up is transferred directly from the storage system to the backup storage system without going through a server and information being restored is transferred directly from the backup storage system to the storage system without going through the server.

All independent claims 1, 13, 25 recite, or similarly recite, in combination with the remaining elements, a method/system/medium comprising:

obtain a static view of a relevant portion of the storage system, wherein the static view is obtained using one or more of a backup mirror system and taking a snapshot of the relevant portion of the storage system, wherein a period of write inactivity to the storage system is waited for prior to obtaining the static view;

map one or more blocks of data comprising the information being backed up to corresponding files; and

back up the information by transferring the information being backed up using one or more data movers operable to transfer the information being backed up directly from the storage system to the backup storage system, using one or more extended copy commands, without going through the one or more servers; and

restore the information by transferring the information being restored using one or more data movers operable to transfer the information being restored directly from the backup storage system to the storage system, using one or more extended copy commands, without going through the one or more servers.

The closest prior art, Tamura et al (US 6,728,848) shows a similar method of backing up the storage system's data according to an extended copy instruction received from a host computer. However, Tamura et al. still fails to anticipate the above cited limitations obvious at least in light of applicant's remarks.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Miranda Le whose telephone number is (571) 272-4112. The examiner can normally be reached on Monday through Friday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James K. Trujillo, can be reached at (571) 272-3677. The fax number to this Art Unit is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (571) 272-2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Miranda Le/
Primary Examiner, Art Unit 2159